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Patent Application
Docket No.27943-00252USPT
P09890

In The Specification:

Please replace the paragraphs beginning on page 7, lines 3-19, page 18, lines 8-13, page 25, lines 9-21, and page 39, lines 5-13, with the following rewritten paragraphs. A marked up version of the paragraphs is attached as Exhibit A to this Amendment.

Page 7, lines 3-19:

As explained elsewhere in this application, this process of initializing a GPS receiver may often take several minutes.

The duration of the GPS positioning process is directly dependent upon how much information a GPS receiver has. Most GPS receivers are programmed with almanac data, which coarsely describe the expected satellite positions for up to one year ahead. However, if the GPS receiver does not have some knowledge of its own approximate location, then the GPS receiver cannot correlate signals from the visible satellites fast enough, and therefore, cannot calculate its position quickly. Furthermore, it should be noted that a higher [a] signal strength is needed for capturing the C/A Code and the NAV Code at start-up than is needed for continued monitoring of an already-acquired signal. It should also be noted that the process of monitoring the GPS signal is significantly affected by environmental factors. Thus, a GPS signal which may be easily acquired in the open becomes progressively harder to acquire when a receiver is under foliage, in a vehicle, or worst of all, in a building.

Recent governmental mandates, e.g., the response time requirements of the FCC Phase II E-911 service, make it imperative that the exact position of a mobile handset be

Page 18, lines 8-13:

encrypted bits. These encrypted bits are then fed to a burst builder 235 before being burst multiplexed at 240 in conformance with the GSM standard set forth by ETSI. The output of the burst multiplexer 240 are then fed to a differential encoder 245 before being modulated at 250. The modulated bits are then fed to a transmitter 260 and thence via an antenna 280 to the air interface 290.

In the reverse direction, the incoming signals received by the antenna 280 over the air interface 290 are fed to a receiver 270. The received information bits [299] 209 are then extracted by a receiver unit for functional compatibility with the processing performed in the transmit direction as explained above.

The basic GSM access scheme is Time Division Multiple Access (TDMA) with eight basic physical channels per carrier. The carrier separation is 200 KHz. A physical channel is therefore defined as a sequence of TDMA frames as additionally specified by a time slot number and a frequency hopping sequence. The basic radio resource is a time slot that lasts 15/26 ms (i.e. 576.9 μs) and which transmits information at a modulation rate of approximately 270.833 Kbits/s. This means that the duration of each time slot

<u>Page 25, lines 9-21</u>:

frequencies over which the mobile station is to hop, the hopping sequence number of the cell (which allows different sequences to be used on homologous cells) as well as the index offset (which helps distinguish multiple different mobile stations within a cell that use the same mobile allocation). It should be noted that a basic physical channel supporting the Broadcast Control Channel (BCCH) does not frequency hop.

The Cell Broadcast Channel (CBCH) has 228 bits per block, comprising 184 bits of data, 40 bits of parity and 4 bits are tail bits of the convolutional code. The blocks are convolutionally coded at a code

rate of ½ resulting in a total of 456 coded bits/block. The blocks are interleaved to a depth of four over a number of bursts. A Broadcast Control Channel (BCCH) transmission, [–] like a Cell Broadcast Channel (CBCH) transmission, has 228 bits per block, comprising 184 data bits, 40 parity bits and 4 tail bits[)], which are convolutionally coded at a ½ code rate resulting in 456 coded bits/block. However, unlike CBCH transmissions, BCCH transmissions are interleaved to a depth of six over a number of bursts.

Page 39, lines 5-13:

receiver does not have some knowledge of its own approximate location, then the GPS receiver cannot correlate signals from the visible satellites fast enough, and therefore, cannot calculate its position quickly.

Furthermore, it should be noted that a higher [a] signal strength is needed for capturing the C/A Code and the NAV Code at start-up than is needed for continued monitoring of an already-acquired signal. It should also be noted that the process of monitoring the GPS signal is significantly affected by environmental factors. Thus, a GPS signal which may be easily acquired in the open becomes progressively harder to acquire when a receiver is under foliage, in a vehicle, or worst of all, in a building.

Recent governmental mandates, e.g., the response time requirements of the FCC Phase II E-911 service, have made it imperative that the exact position of a mobile handset be determined in an expedited manner. Thus, in order to implement a GPS receiver effectively within a mobile terminal while also meeting the demands for expedited and accurate positioning, it has become necessary to be able to quickly provide mobile terminals with accurate assistance data, e.g., local time and position estimates, satellite ephemeris and